Technical Documentation

SECON-X

OpenVPN Installation

Connection to SECON-Server

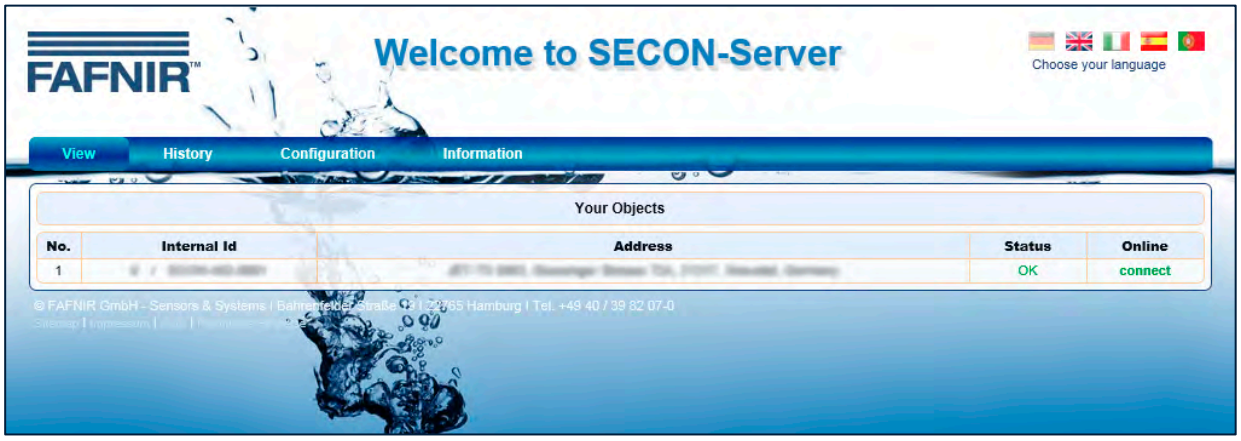

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Table of Contents

1 Overview 1

1.1 SECON-X system components 1

1.2 About this document 1

1.3 Connection to the SECON-Server 2

1.4 Safety instructions 2

2 OpenVPN Software Installation 3

2.1 Installation for Windows Operating system (32/64 bit) 3

2.2 Installation for Mac OS X operating system 7

2.3 Installation for the iOS operating system 12

2.4 Installation for the Android operating system 16

3 List of figures 23

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1 Overview

1.1 SECON-X system components

SECON-X is a hardware-software network system which comprises several components (see figure below) and performs the following tasks:

- Global data access with web interface to SECON clients (VISY, VAPORIX)
- Remote diagnostics
- Remote display, evaluation and data storage
- Universal data format

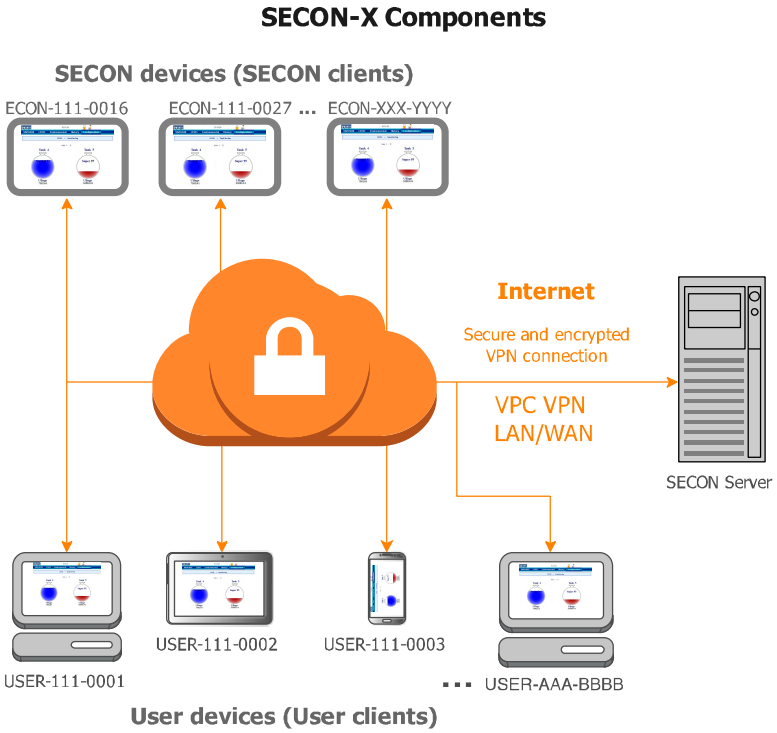

Figure 1: SECON-X system and components

1.2 About this document

This documentation describes how to install the software OpenVPN for an encrypted and secure VPN connection of user clients to the SECON-Server. For installation and operation of further SECON devices, see:

- SECON-Client, technical documentation, art. no. 350076
- SECON-Lev Administrator, technical documentation, art. no. 350136
- SECON-Lev User Manual, technical documentation, art. no. 350111
- SECON-Vap Administrator, technical documentation, art. no. 350134
- SECON-Vap User Manual, technical documentation, art. no. 350113

1.3 Connection to the SECON-Server

The connection of the user clients to the SECON-Server (see Figure 1) is established by a secure encrypted Internet connection (VPN Virtual Private Network).

(1) For the encrypted Internet connection the VPN software **OpenVPN** need to be installed on the used PC, mobile phone or tablet (user clients). OpenVPN is open-source software (free software) with GNU General Public License.

(2) **Key and configuration files** are required, which are provided by the FAFNIR company.

(3) For remote access, “Mozilla Firefox”, “Opera”, "Chrome" or "Safari" are the **preferred web browsers**.

Remote access is currently not possible with Internet Explorer.

1.4 Safety instructions

For use of open source software, the guidelines and safety advice listed applies.

Operator / administrator must ensure regular installation of updates in order to ensure the security of data transmission.

2 OpenVPN Software Installation

2.1 Installation for Windows Operating system (32/64 bit)

For installation, administrator rights are required.

(1) Open the **OpenVPN website** at https://openvpn.net/

(2) The OpenVPN software is located in the community section in the download area.

(3) Once there, select a valid OpenVPN version for your operating system and save it to your PC.

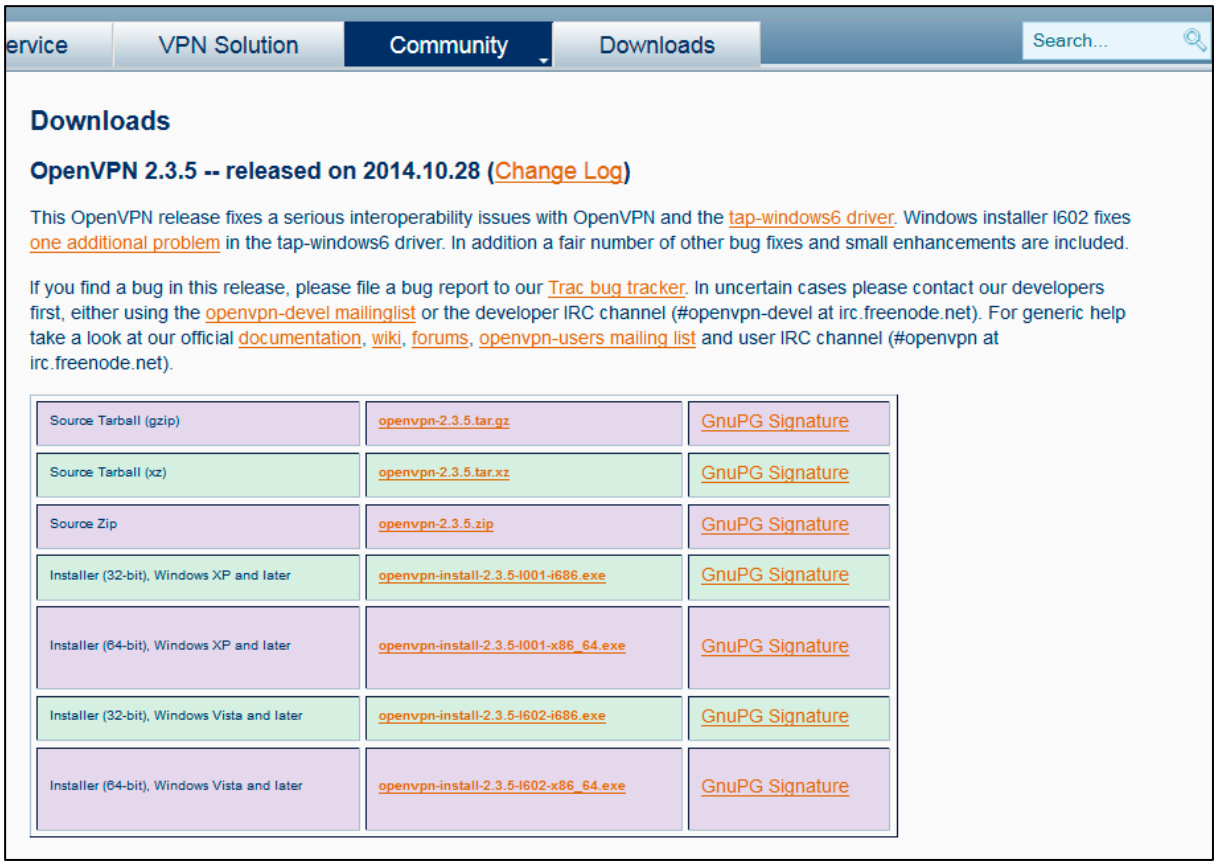
ervice
VPN Solution
Community
Downloads
Search...
Downloads
OpenVPN 2.3.5 -- released on 2014.10.28 (Change Log)
This OpenVPN release fixes a serious interoperability issues with OpenVPN and the tap-windows6 driver. Windows installer I602 fixes one additional problem in the tap-windows6 driver. In addition a fair number of other bug fixes and small enhancements are included.
If you find a bug in this release, please file a bug report to our Trac bug tracker. In uncertain cases please contact our developers first, either using the openvpn-devel mailinglist or the developer IRC channel (#openvpn-devel at irc.freenode.net). For generic help take a look at our official documentation, wiki, forums, openvpn-users mailing list and user IRC channel (#openvpn at irc.freenode.net).
Source Tarball (gzip)
openvpn-2.3.5.tar.gz
GnuPG Signature
Source Tarball (xz)
openvpn-2.3.5.tar.xz
GnuPG Signature
Source Zip
openvpn-2.3.5.zip
GnuPG Signature
Installer (32-bit), Windows XP and later
openvpn-install-2.3.5-I001-i686.exe
GnuPG Signature
Installer (64-bit), Windows XP and later
openvpn-install-2.3.5-I001-x86_64.exe
GnuPG Signature
Installer (32-bit), Windows Vista and later
openvpn-install-2.3.5-I602-i686.exe
GnuPG Signature
Installer (64-bit), Windows Vista and later
openvpn-install-2.3.5-I602-x86_64.exe
GnuPG Signature

Figure 2: Windows OpenVPN

(4) *Install OpenVPN with the default settings* preferably not in the default directory, but in a new installation directory (e.g. C:\OpenVPN).

(5) Confirm installation of the "*TAP Window adapter*", see the following figure:

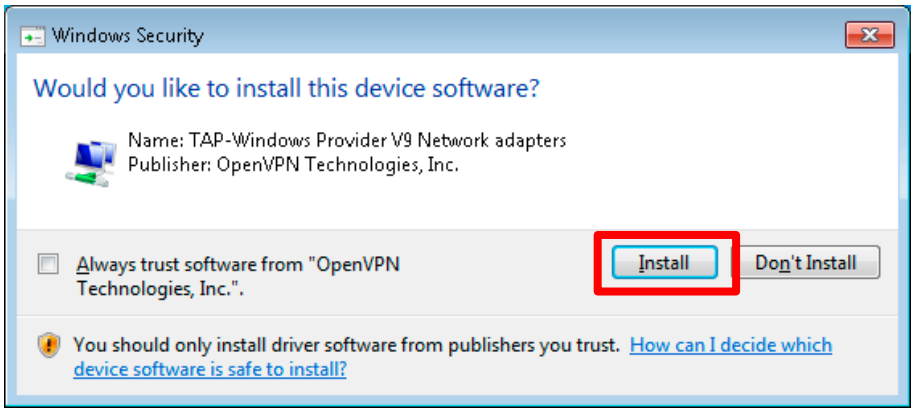
Windows Security
Would you like to install this device software?
Name: TAP-Windows Provider V9 Network adapters
Publisher: OpenVPN Technologies, Inc.
Always trust software from "OpenVPN Technologies, Inc.".
Install
Don't Install
You should only install driver software from publishers you trust. How can I decide which device software is safe to install?

Figure 3: TAP Window Adapter

(6) The successful installation is confirmed with the following message:

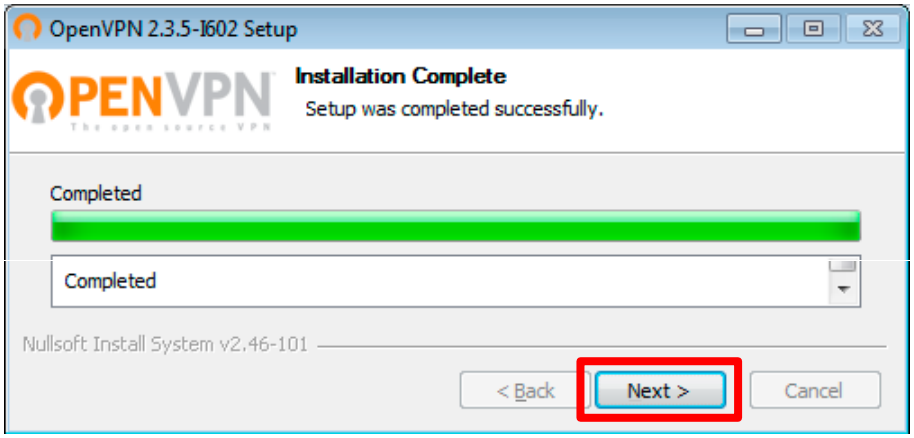

Figure 4: Installation note

(7) Finish the installation by clicking on <Finish>.

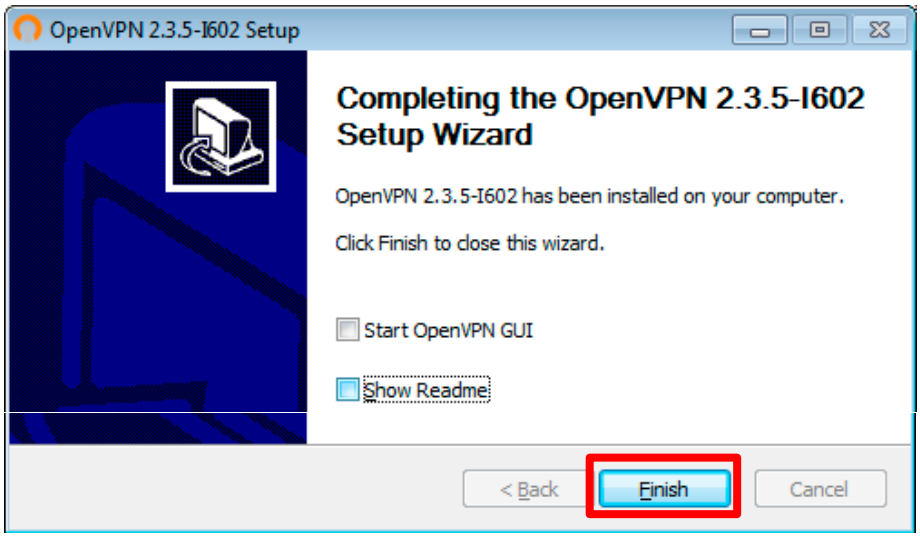

Figure 5: Complete installation

(8) Open the "properties" menu by right-clicking the mouse onto the OpenVPN icon and confirm “Run the program as administrator” for all users, see the following figures:

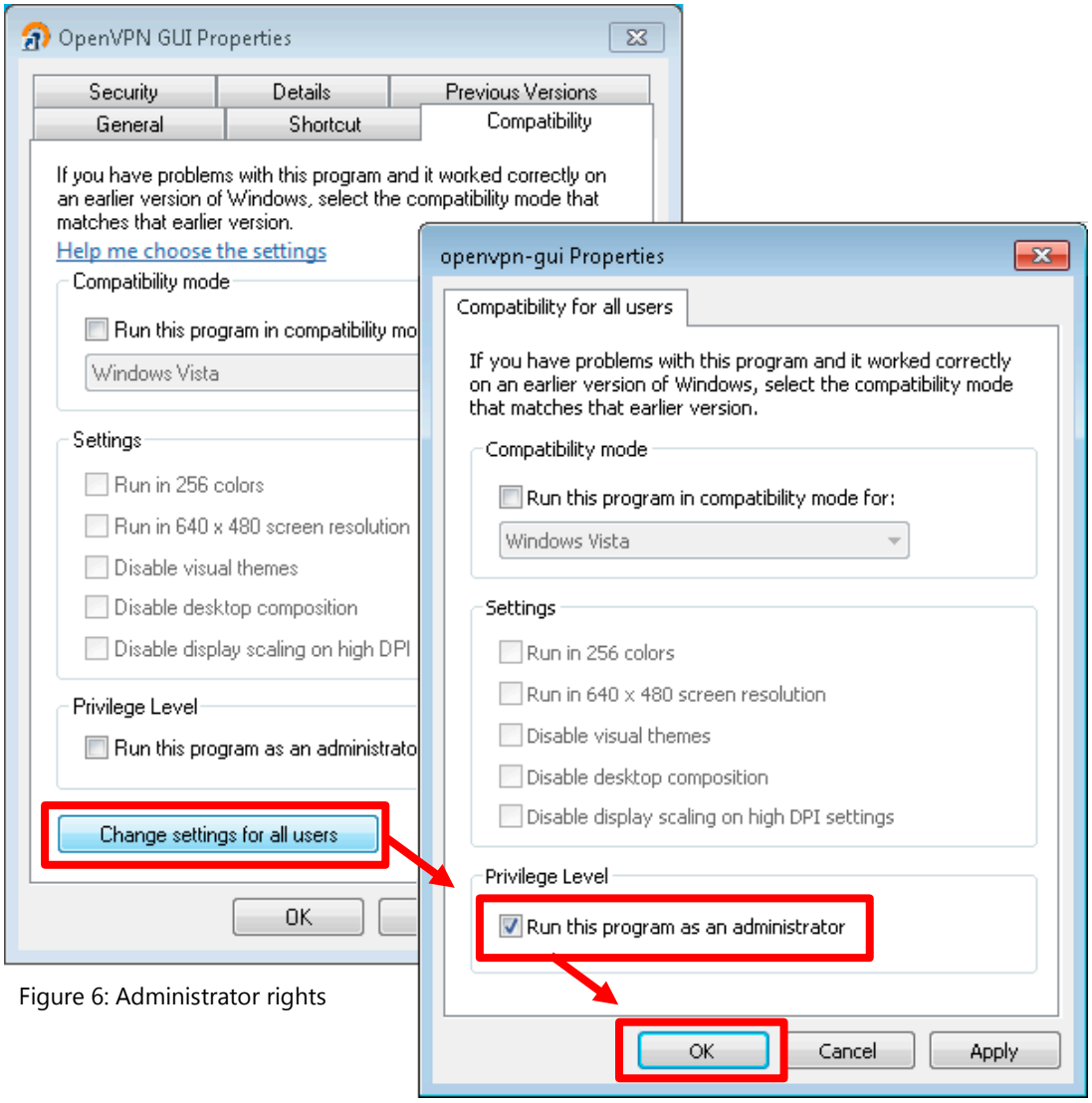
OpenVPN GUI Properties
Security
Details
Previous Versions
General
Shortcut
Compatibility
If you have problems with this program and it worked correctly on an earlier version of Windows, select the compatibility mode that matches that earlier version.
Help me choose the settings
Compatibility mode
Run this program in compatibility mo
Windows Vista
Settings
Run in 256 colors
Run in 640 x 480 screen resolution
Disable visual themes
Disable desktop composition
Disable display scaling on high DPI
Privilege Level
Run this program as an administrato
Change settings for all users
OK
openvpn-gui Properties
Compatibility for all users
If you have problems with this program and it worked correctly on an earlier version of Windows, select the compatibility mode that matches that earlier version.
Compatibility mode
Run this program in compatibility mode for:
Windows Vista
Settings
Run in 256 colors
Run in 640 x 480 screen resolution
Disable visual themes
Disable desktop composition
Disable display scaling on high DPI settings
Privilege Level
Run this program as an administrator
OK
Cancel
Apply

Figure 6: Administrator rights

(9) Open the OpenVPN installation directory
(e. g. C:\OpenVPN)

(10) Copy the OpenVPN key and configuration files provided by FAFNIR to the “config” sub-directory of the installation directory (e. g. C:\OpenVPN\config):

“**ca.crt**”
“**SECON-VPN-Client.ovpn**”
“**USER-AAA-BBBB.crt**” (AAA-BBBB represents a USER ID)
“**USER-AAA-BBBB.key**” (AAA-BBBB represents a USER ID)

*If you are not using the FAFNIR server, you must enter the IP address of your server within the file **"SECON VPN Client.ovpn"** instead of the FAFNIR IP address. Copy the modified file as a backup file.*

(11) Start OpenVPN by a double-click on the **OpenVPN GUI** link.
Now the OpenVPN icon is displayed in the info area of the task bar.

(12) OpenVPN connection / disconnection
Right-click on the OpenVPN icon and select "*Connect*" for connection or "*Disconnect*" for disconnection.

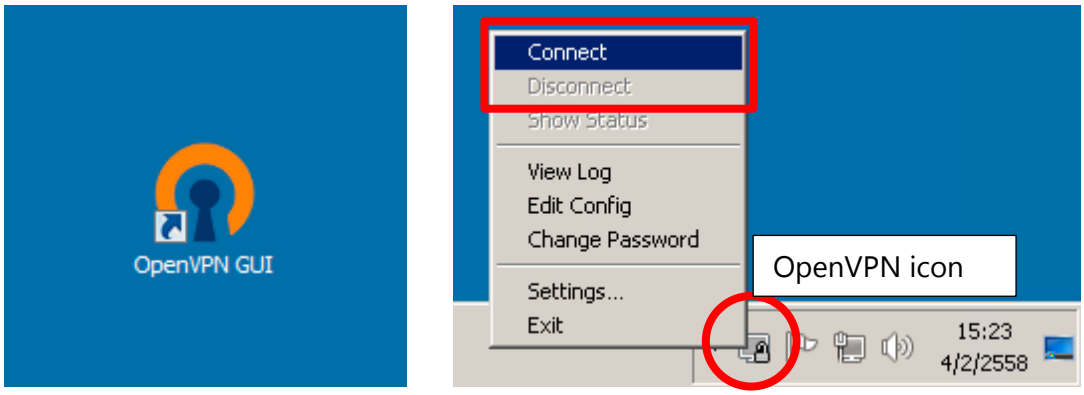

Figure 7: OpenVPN connection / disconnection

☞ *After successful connection, the colour of the icon will change to **green.***

(13) Open your web browser and enter the SECON-Server address in the address bar (in this example, the FAFNIR SECON-Server http://10.0.8.1):

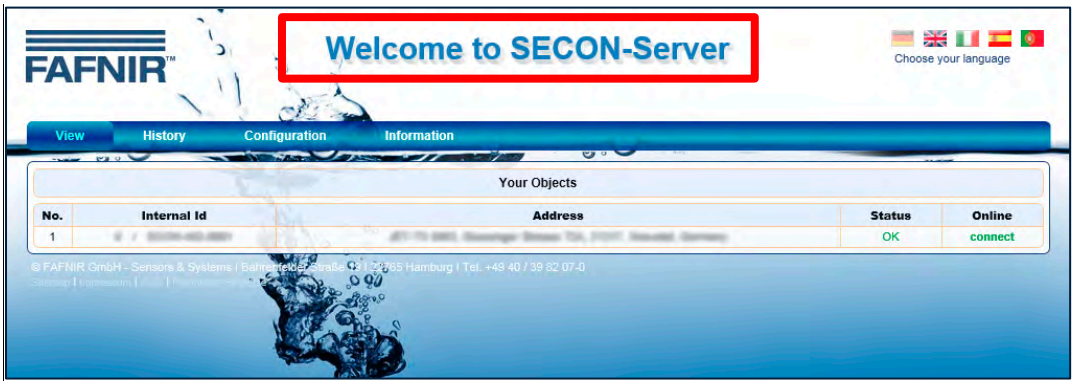

Figure 8: SECON-Server startup screen

2.2 Installation for Mac OS X operating system

For installation, administrator rights are required.

(1) Open the **Tunnelblick Homepage** https://code.google.com/p/tunnelblick

(2) The OpenVPN open source software for Mac OS "Tunnelblick" is a current stable version available in the tab "Downloads" under "Tunnelblick Stable Release".

(3) There, select the OpenVPN version suitable for your Mac OS operating system and save it to install on your Mac.

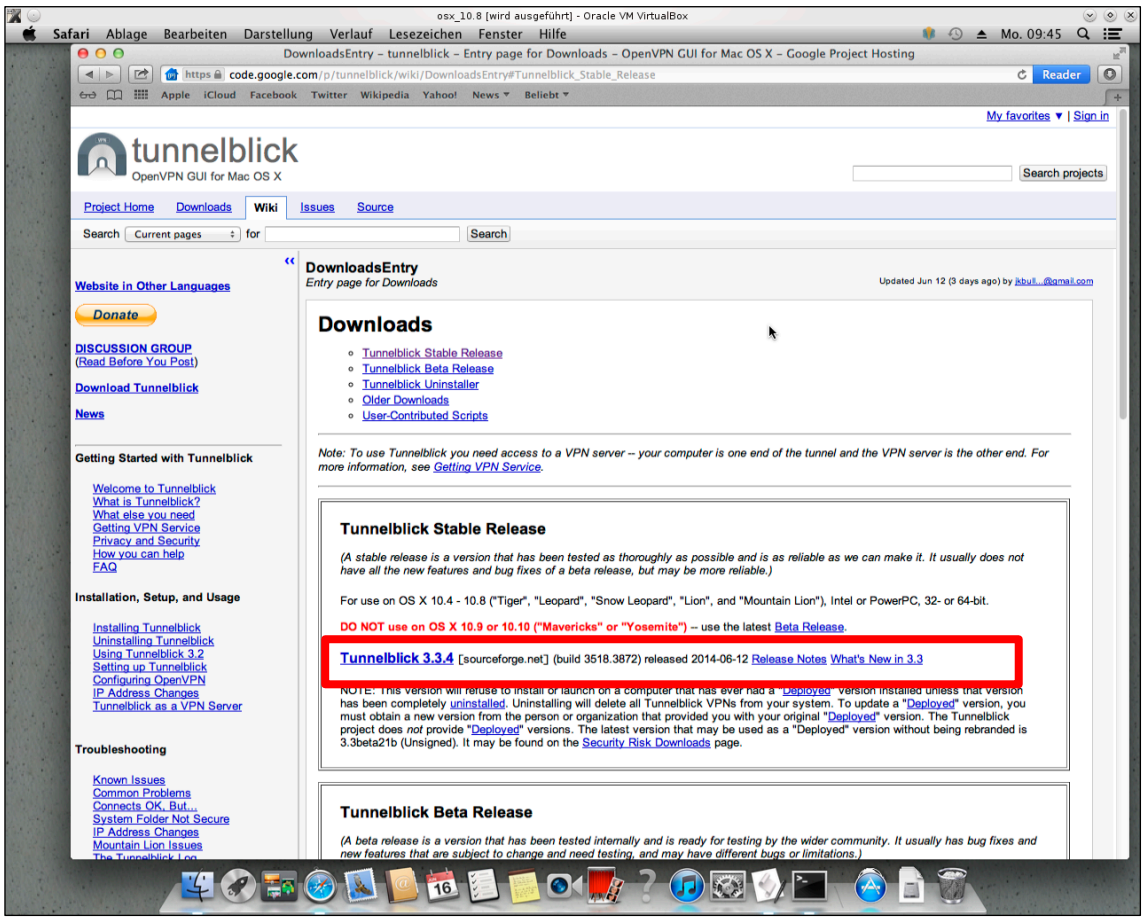

Figure 9: Macintosh OpenVPN (Tunnelblick)

(4) Run the downloaded file

(5) Start the installation by double-click on "Tunnelblick" and enter the following confirmation prompt, see the following figure ...

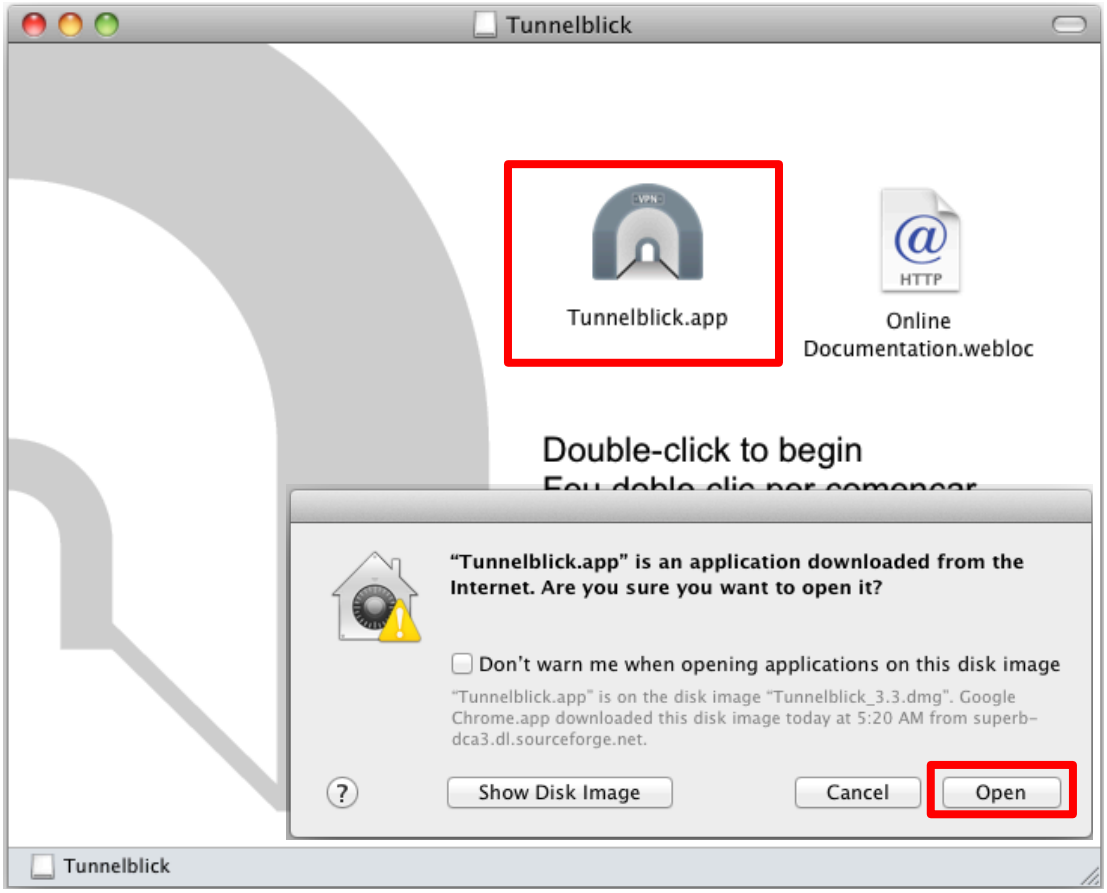
Tunnelblick
Tunnelblick.app
HTTP
Online
Documentation.webloc
Double-click to begin
"Tunnelblick.app" is an application downloaded from the Internet. Are you sure you want to open it?
Don't warn me when opening applications on this disk image
"Tunnelblick.app" is on the disk image "Tunnelblick_3.3.dmg". Google Chrome.app downloaded this disk image today at 5:20 AM from superb-dca3.dl.sourceforge.net.
Show Disk Image
Cancel
Open
Tunnelblick

Figure 10: Confirmation prompt

(6) The successful installation will be confirmed by a message, see the following figure. Start Tunnelblick by clicking on <Launch>:

Figure 11: Launching Tunnelblick

(7) Key and configuration files provided by FAFNIR are required for connecting to the SECON-Server.

(8) Confirm the following prompt with "I have configuration files":

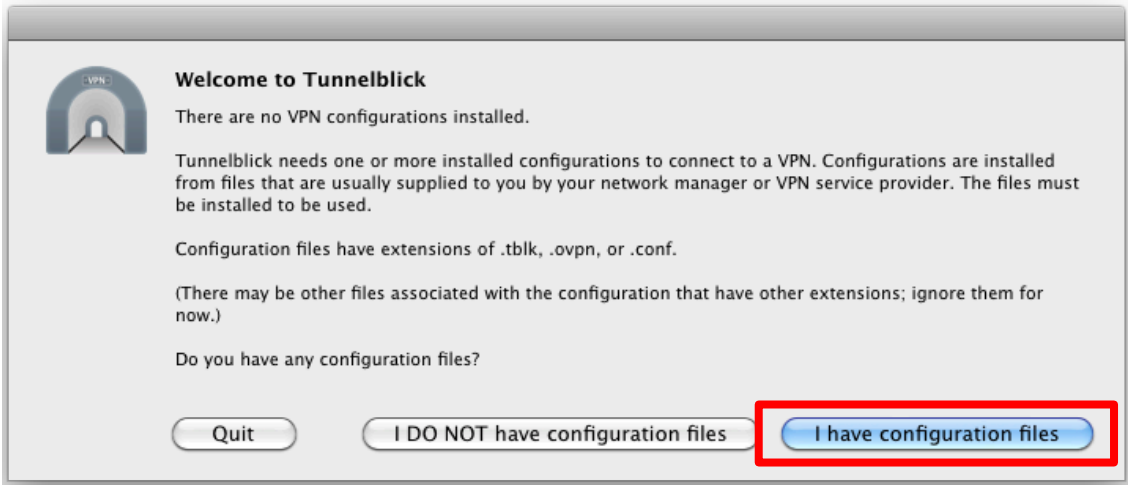
Welcome to Tunnelblick
There are no VPN configurations installed.
Tunnelblick needs one or more installed configurations to connect to a VPN. Configurations are installed from files that are usually supplied to you by your network manager or VPN service provider. The files must be installed to be used.
Configuration files have extensions of .tblk, .ovpn, or .conf.
(There may be other files associated with the configuration that have other extensions; ignore them for now.)
Do you have any configuration files?
Quit
I DO NOT have configuration files
I have configuration files

Figure 12: Configuration files prompt

(9) Confirm the following prompt with "OpenVPN configuration"

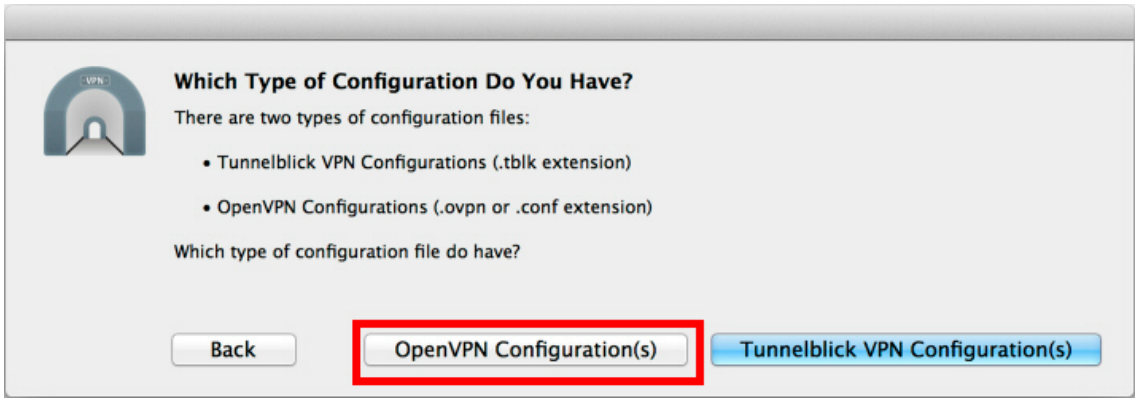
Which Type of Configuration Do You Have?
There are two types of configuration files:
• Tunnelblick VPN Configurations (.tblk extension)
• OpenVPN Configurations (.ovpn or .conf extension)
Which type of configuration file do have?
Back
OpenVPN Configuration(s)
Tunnelblick VPN Configuration(s)

Figure 13: Query of the type of configuration files

(10) Save the OpenVPN key and configuration files provided by FAFNIR to your Desktop or a FAT formatted USB stick:

"**ca.crt**"
"**SECON-VPN-Client.ovpn**"
"**USER-AAA-BBBB.crt**" (AAA-BBBB represents a USER ID)
"**USER-AAA-BBBB.key**" (AAA-BBBB represents a USER ID).

(11) Drag the OpenVPN key and configuration files to the folder “Empty Tunnelblick VPN Configuration”

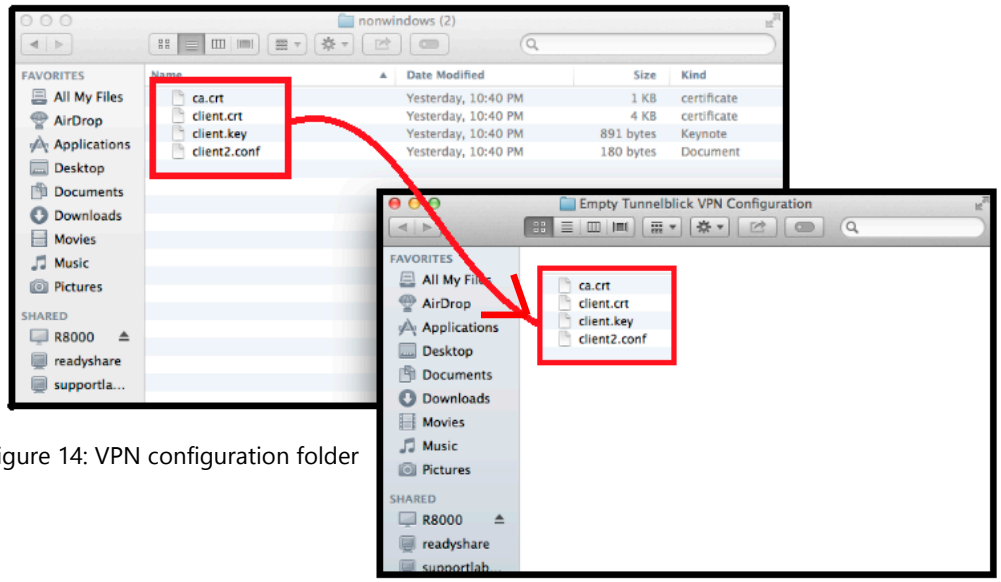

Figure 14: VPN configuration folder

(12) Open the file with the extension .ovpn and confirm the selection.

(13) Confirm the following installation query for "All Users" respectively “Only me”:

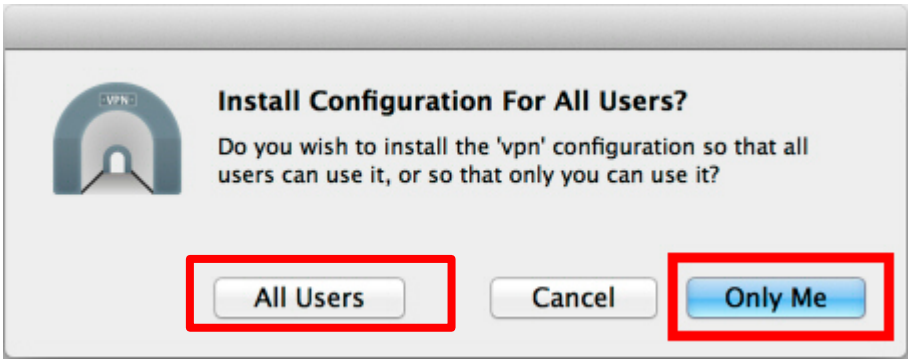
Install Configuration For All Users?
Do you wish to install the 'vpn' configuration so that all users can use it, or so that only you can use it?
All Users
Cancel
Only Me

Figure 15: Installation for "All Users"

You may need to enter a username and password.

(14) Enter the installation prompt with “OK”.

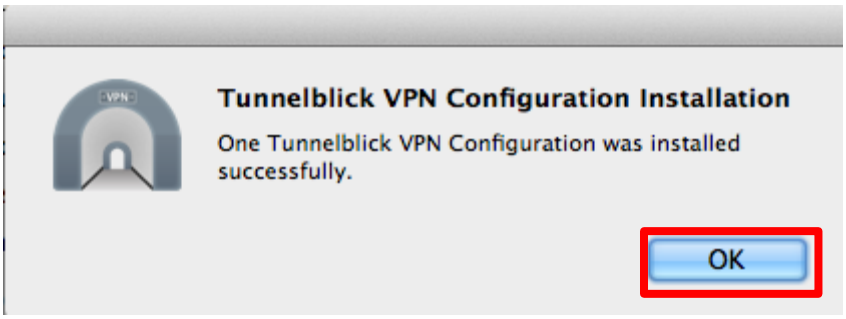

Figure 16: VPN configuration prompt

(15) After successful installation and configuration the Tunnelblick icon is displayed in the top menu bar, which allows you to open the Tunnelblick window.

(16) Start/Stop the VPN connection with the "Connect"/"Disconnect" button:

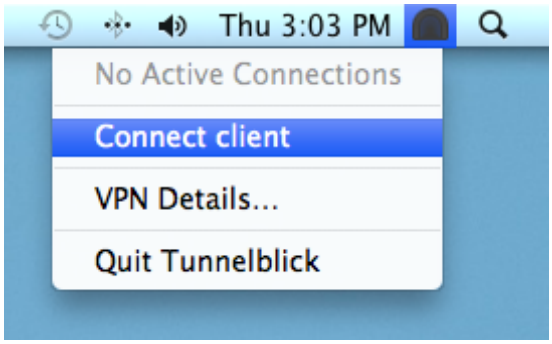

Figure 17: Start of VPN connection

(17) Open your web browser and enter the SECON-Server address in the address bar (in this example, the FAFNIR SECON-Server http://10.0.8.1):

If you use your own server, the configuration files and the server address in the browser bar must be changed accordingly.

(18) It opens the SECON-Server with the startup screen:

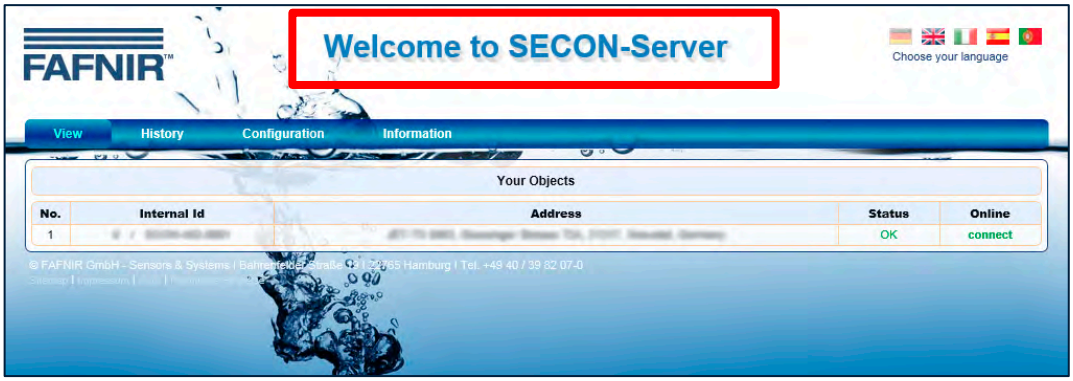

Figure 18: SECON-Server startup screen

2.3 Installation for the iOS operating system

(1) On your iPhone / iPad look for the **OpenVPN Connect** app in the **Apple App Store** and install it:

Figure 19: iOS OpenVPN

(2) Confirm the access rights and open OpenVPN Connect:

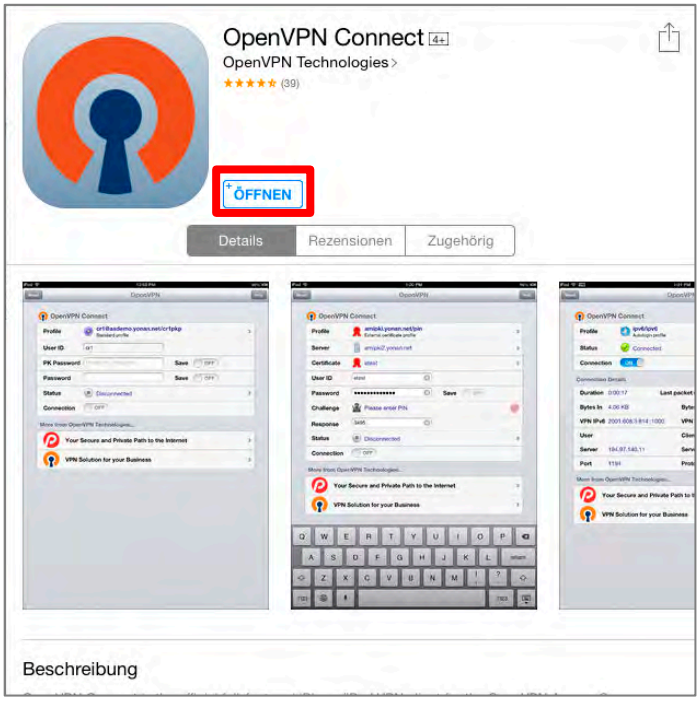

Figure 20: Open OpenVPN Connect

(3) With **iTunes** open the OpenVPN Connect app on your PC and add the provided key files to the folder **"Documents of OpenVPN":**

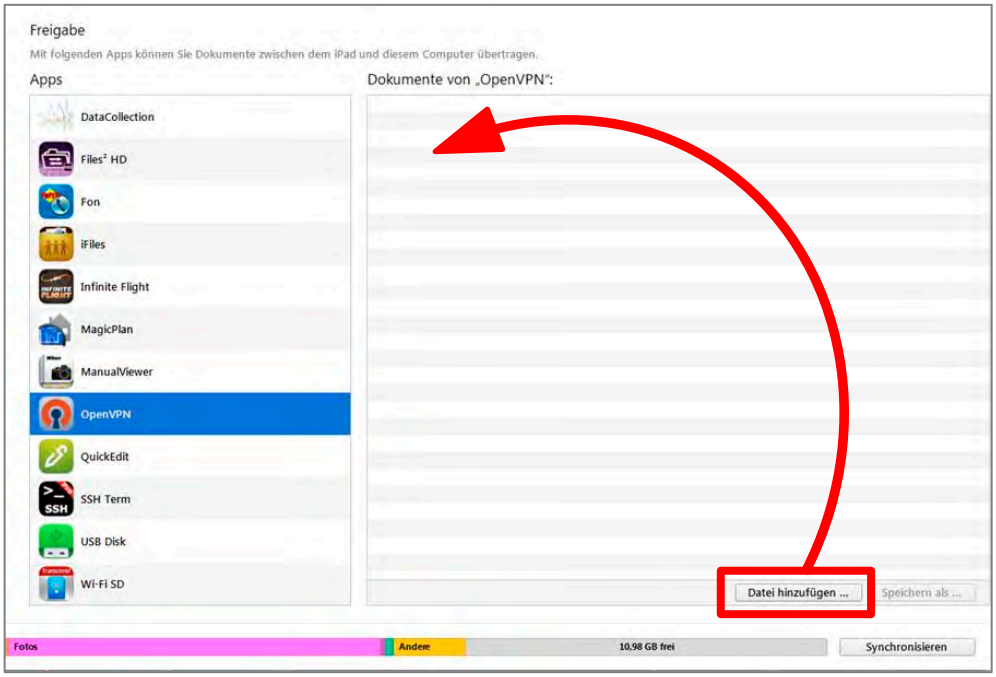

Figure 21: Opening OpenVPN Connect with iTunes

(4) Synchronize the key files with your iPhone / iPad:

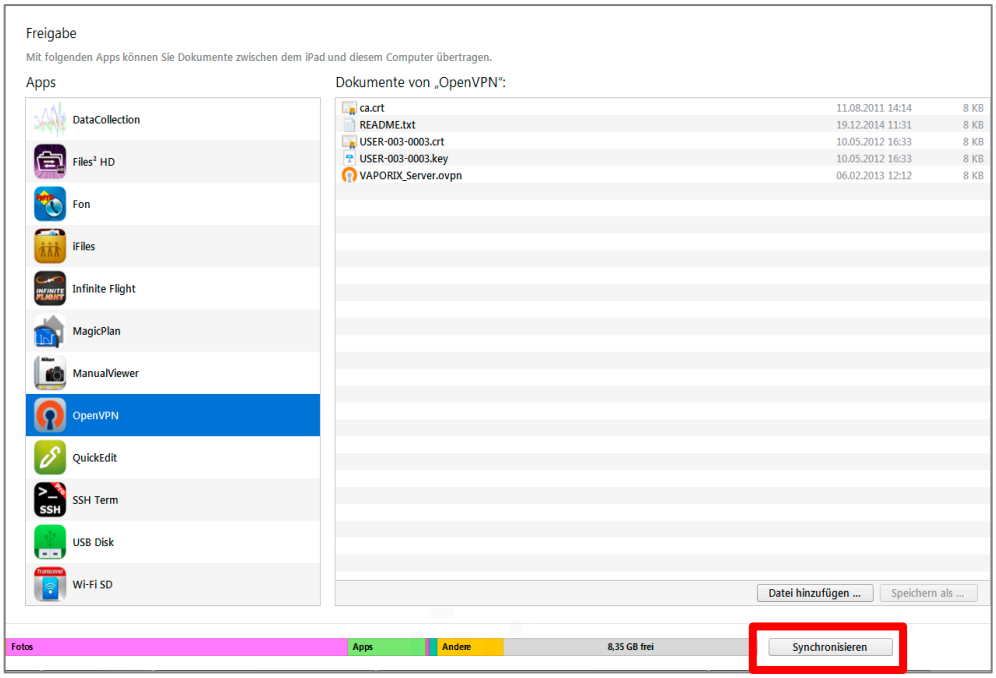

Figure 22: Synchronizing OpenVPN Connect files

(5) Within OpenVPN Connect, click onto the green circle to add the server:

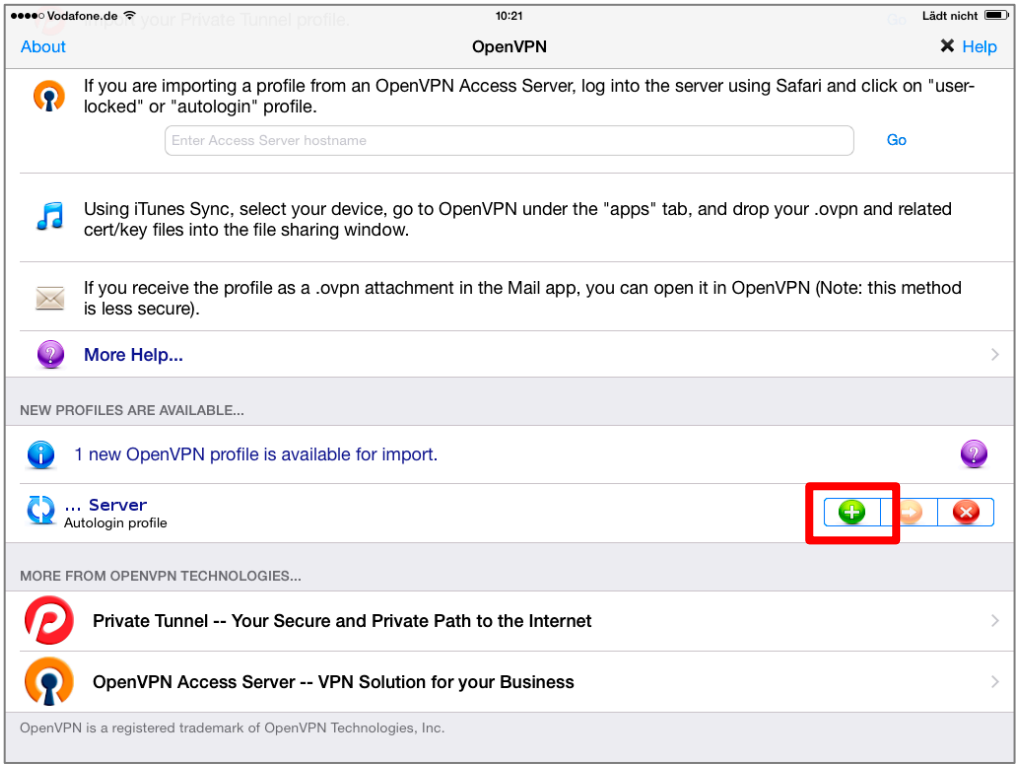
Vodafone.de
10:21
Lädt nicht
About
OpenVPN
Help
If you are importing a profile from an OpenVPN Access Server, log into the server using Safari and click on "user-locked" or "autologin" profile.
Enter Access Server hostname
Go
Using iTunes Sync, select your device, go to OpenVPN under the "apps" tab, and drop your .ovpn and related cert/key files into the file sharing window.
If you receive the profile as a .ovpn attachment in the Mail app, you can open it in OpenVPN (Note: this method is less secure).
More Help...
NEW PROFILES ARE AVAILABLE...
1 new OpenVPN profile is available for import.
... Server
Autologin profile
MORE FROM OPENVPN TECHNOLOGIES...
Private Tunnel -- Your Secure and Private Path to the Internet
OpenVPN Access Server -- VPN Solution for your Business
OpenVPN is a registered trademark of OpenVPN Technologies, Inc.

Figure 23: Adding OpenVPN Connect Server

(6) For the trusted connection or termination of the secure connection click the "Connection" button and confirm the following prompt:

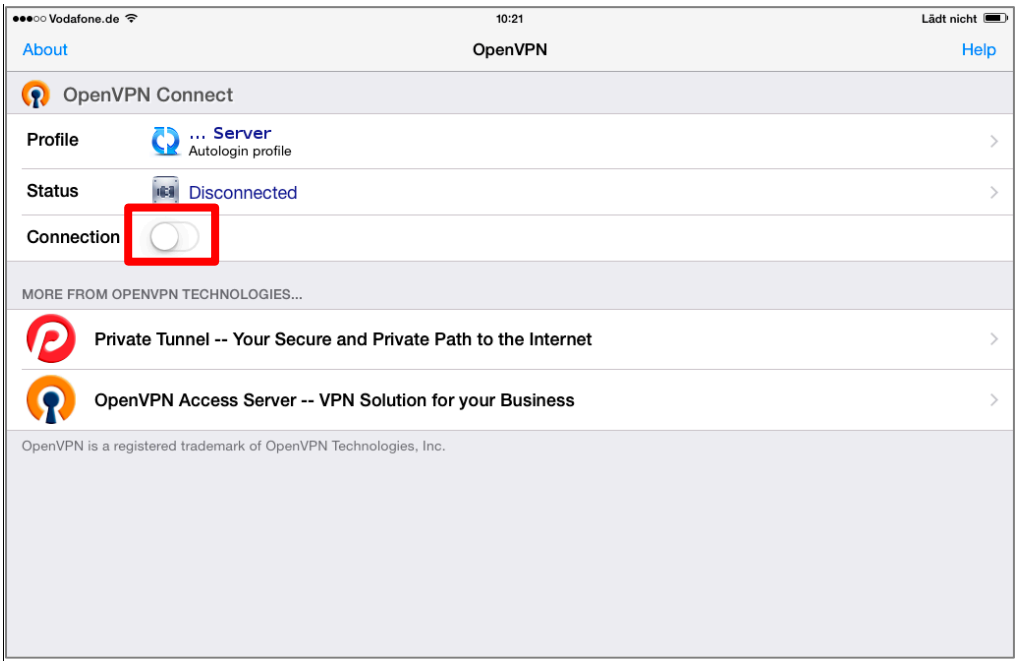

Figure 24: Secure VPN connection on / off

(7) The secure VPN connection is shown with the **green connection symbol:**

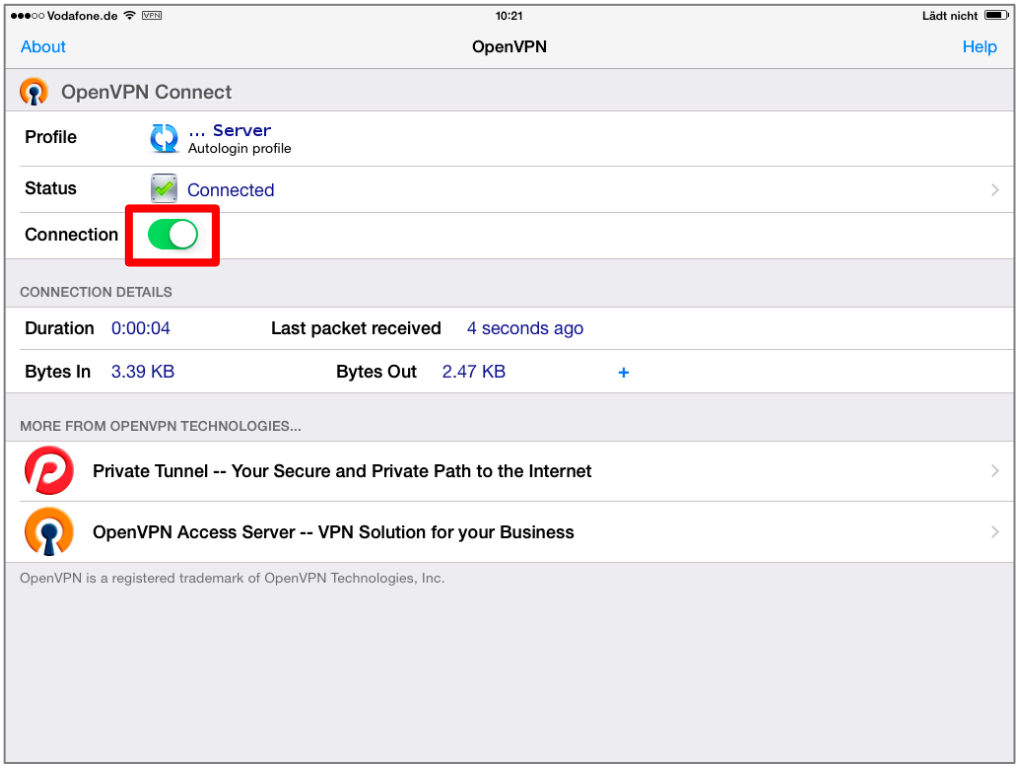

Figure 25: Secure VPN connection established

(8) Open your web browser with the server address http://10.0.8.1. The secure connection is displayed with a VPN icon in the menu bar:

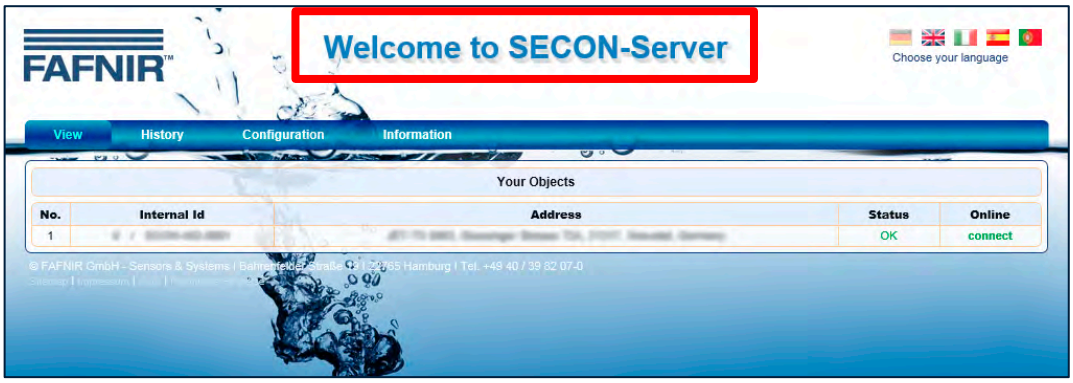

Figure 26: SECON-Server startup screen with secure VPN connection

2.4 Installation for the Android operating system

(1) On your Android phone or Android tablet look for the **OpenVPN Connect** app at **Google Play Store** and install it:

Figure 27: Android OpenVPN

(2) Confirm the access rights:

Figure 28: Access rights

(3) Open the OpenVPN Connect app:

Figure 29: Open OpenVPN Connect

(4) Open the "Settings" menu in the OpenVPN startup screen:

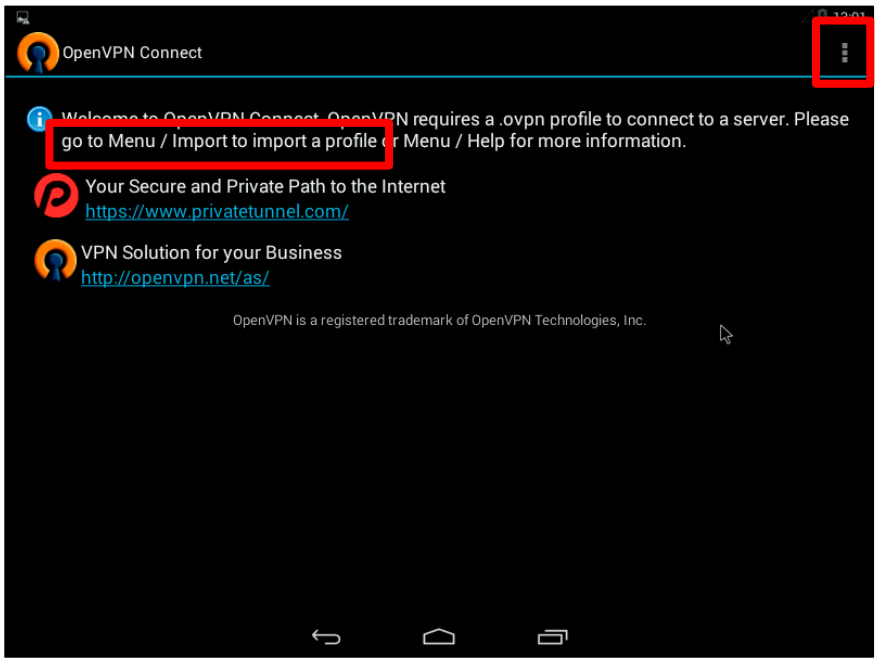
OpenVPN Connect
go to Menu / Import to import a profile
Menu / Help for more information.
Your Secure and Private Path to the Internet
https://www.privatetunnel.com/
VPN Solution for your Business
http://openvpn.net/as/
OpenVPN is a registered trademark of OpenVPN Technologies, Inc.

Figure 30: OpenVPN Connect startup screen

(5) Select the menu item "Import" and then "Import profiles from SD card":

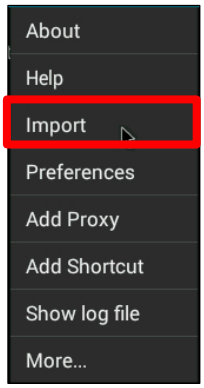

Figure 31: Drop-down list "Import"

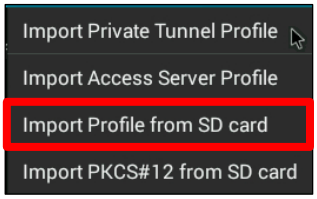

Figure 32: Drop-down list "Import profiles from SD card"

Save the key and configuration files provided by FAFNIR:

"**ca.crt**"
"**SECON-VPN-Client.ovpn**"
"**USER-AAA-BBBB.crt**" (AAA-BBBB represents a USER ID)
"**USER-AAA-BBBB.key**" (AAA-BBBB represents a USER ID)

on the SD card of your Android phone / tablet or on a FAT formatted USB stick.

(6) Open that folder in the import query.

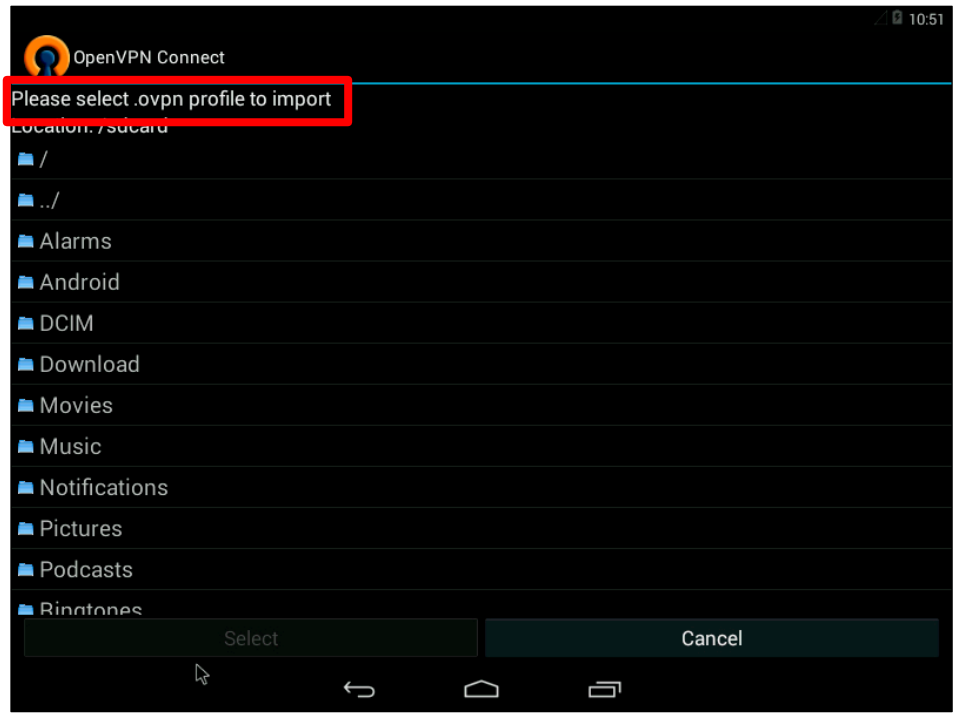

Figure 33: Import query

(7) Choose the file with the extension .ovpn and confirm this selection with "Select":

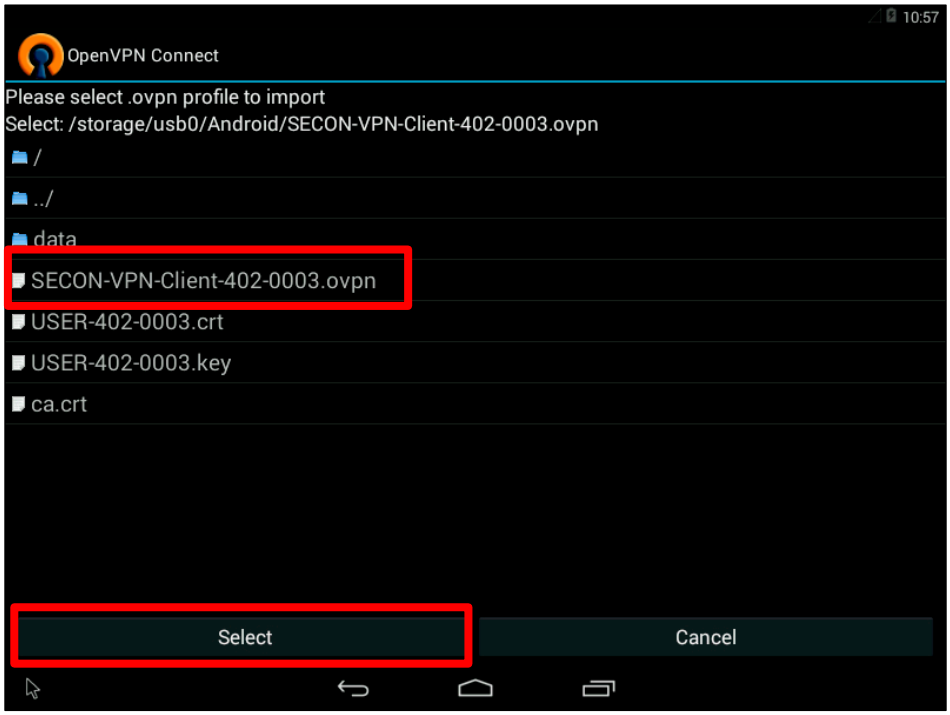

Figure 34: Selection of the ovpn profile

(8) Select "Connect" to establish the secure VPN connection

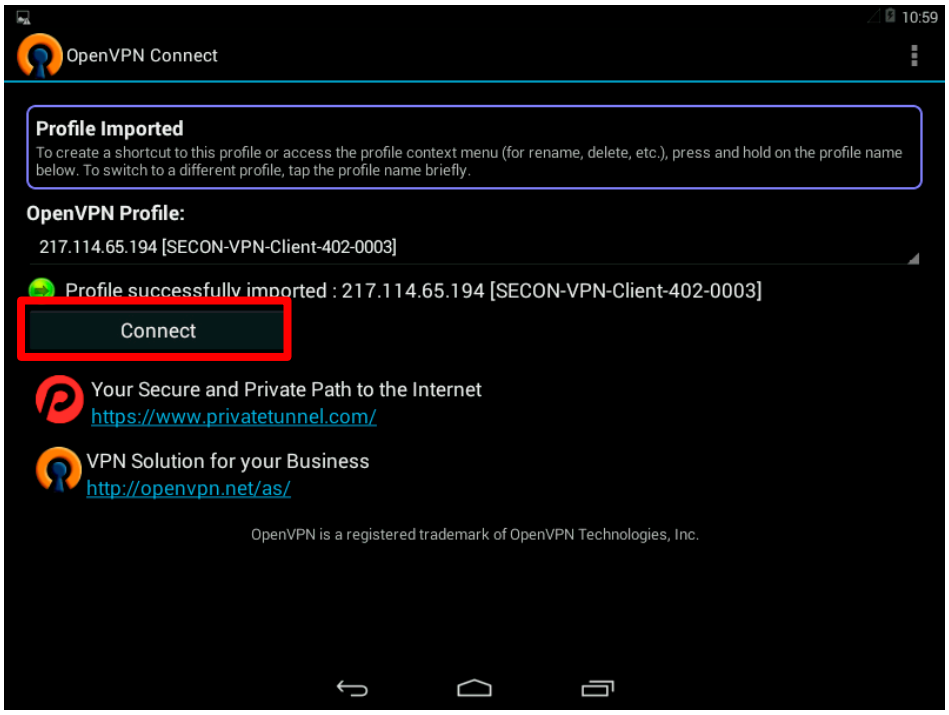
10:59
OpenVPN Connect
Profile Imported
To create a shortcut to this profile or access the profile context menu (for rename, delete, etc.), press and hold on the profile name below. To switch to a different profile, tap the profile name briefly.
OpenVPN Profile:
217.114.65.194 [SECON-VPN-Client-402-0003]
Profile successfully imported : 217.114.65.194 [SECON-VPN-Client-402-0003]
Connect
Your Secure and Private Path to the Internet
https://www.privatetunnel.com/
VPN Solution for your Business
http://openvpn.net/as/
OpenVPN is a registered trademark of OpenVPN Technologies, Inc.

Figure 35: Execution of the secure VPN connection

(9) Enter the confirmation prompt:

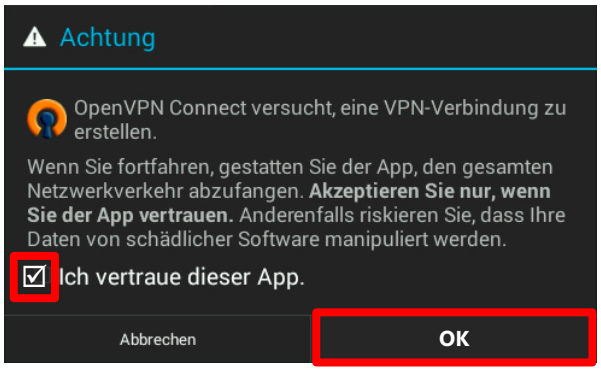
Achtung
OpenVPN Connect versucht, eine VPN-Verbindung zu erstellen.
Wenn Sie fortfahren, gestatten Sie der App, den gesamten Netzwerkverkehr abzufangen. **Akzeptieren Sie nur, wenn Sie der App vertrauen.** Anderenfalls riskieren Sie, dass Ihre Daten von schädlicher Software manipuliert werden.
Ich vertraue dieser App.
Abbrechen
OK

Figure 36: Confirmation prompt

(10) Dial-up to the SECON-Server

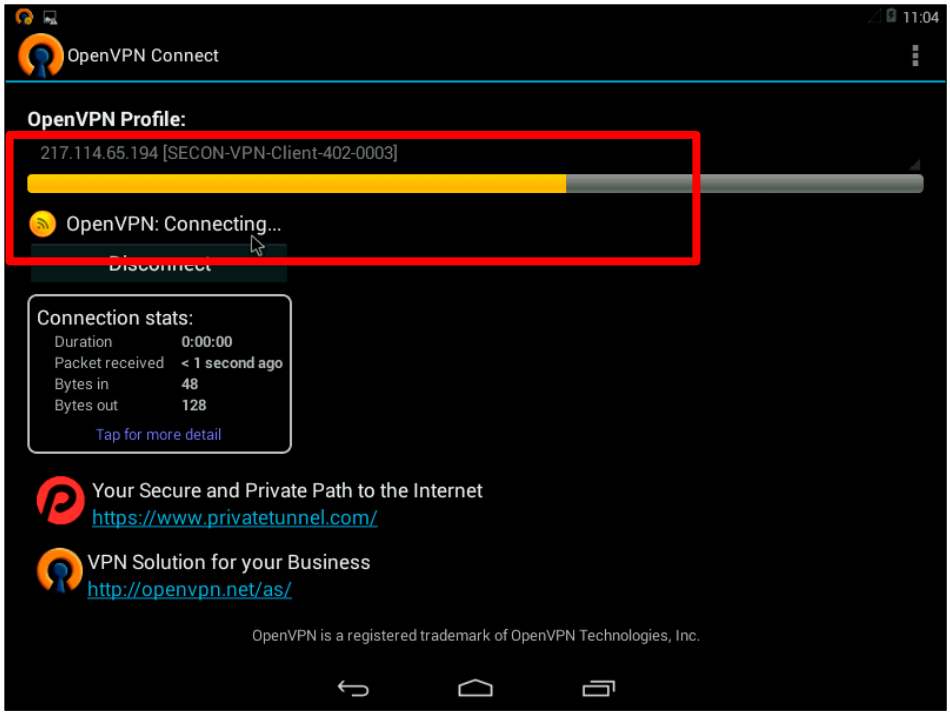

Figure 37: Dial-up to the SECON-Server

(11) View of a successful connection; the OpenVPN icon is displayed with a green point and the mesage "OpenVPN Connected" appears:

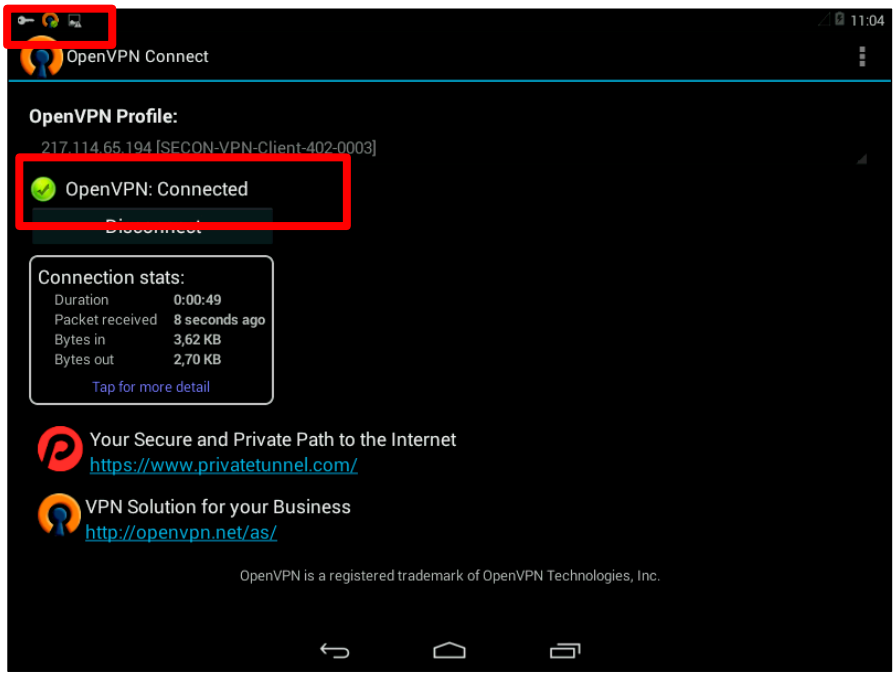

Figure 38: Successful connection

(12) Close the OpenVPN window via the Home button. The connection remains unchanged. Open your web browser and enter the SECON-Server address in the address bar (in this example, the FAFNIR SECON-Server http://10.0.8.1):

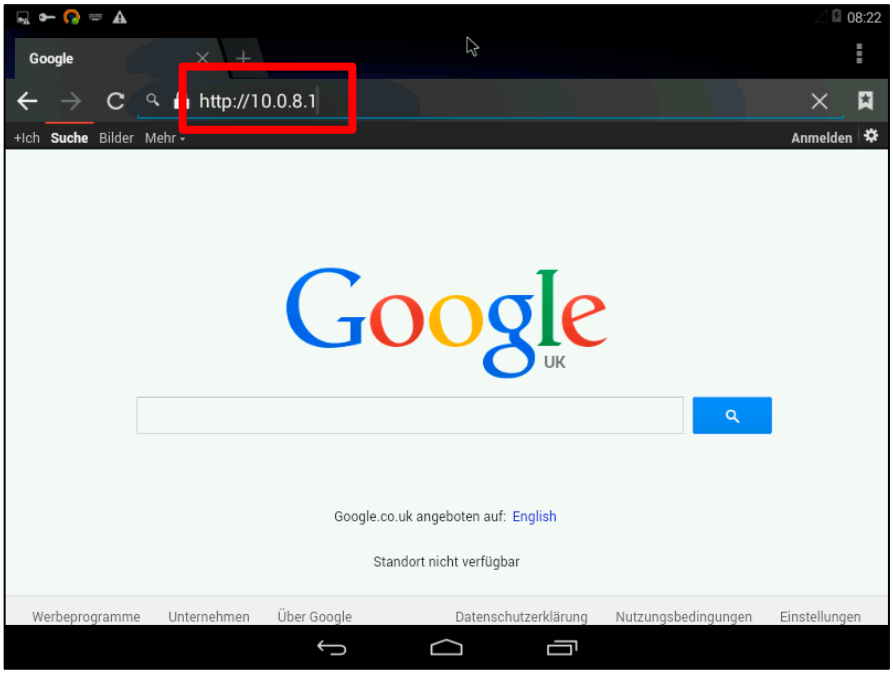

Figure 39: Dial-up to the SECON-Server

If you use your own server, the configuration files and the server address in the browser bar must be changed accordingly.

(13) It opens the SECON-Server with the startup screen:

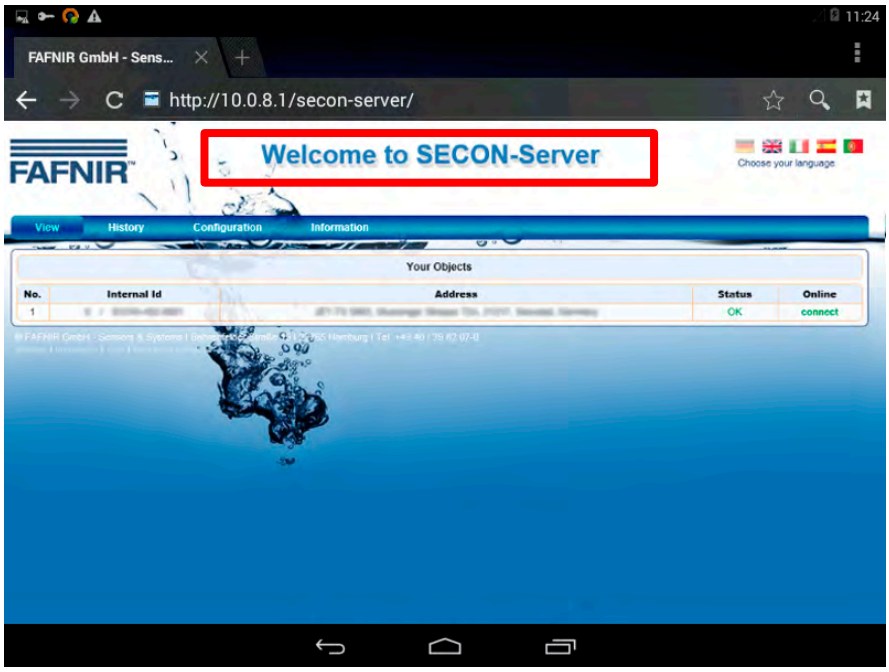

Figure 40: SECON-Server startup screen

(14) To terminate the connection, close the web browser, open the OpenVPN Connect app and press "Disconnect":

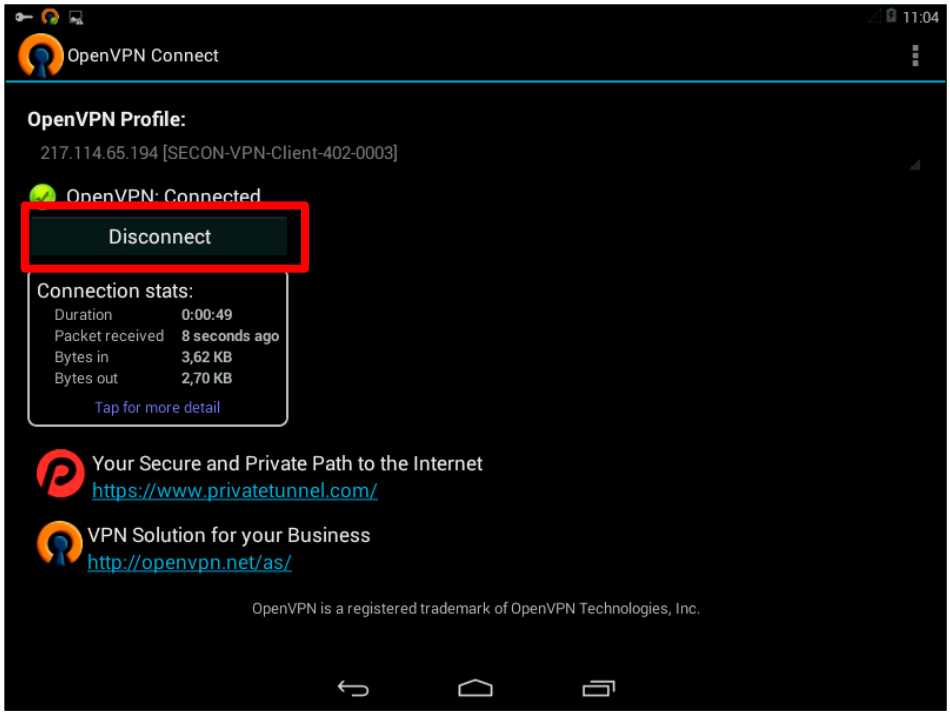

Figure 41: Terminating connection

3 List of figures

Figure 1: SECON-X system and components 1
Figure 2: Windows OpenVPN 3
Figure 3: TAP Window Adapter 4
Figure 4: Installation note 4
Figure 5: Complete installation 4
Figure 6: Administrator rights 5
Figure 7: OpenVPN connection / disconnection 6
Figure 8: SECON-Server startup screen 6
Figure 9: Macintosh OpenVPN (Tunnelblick) 7
Figure 10: Confirmation prompt 8
Figure 11: Launching Tunnelblick 8
Figure 12: Configuration files prompt 9
Figure 13: Query of the type of configuration files 9
Figure 14: VPN configuration folder 10
Figure 15: Installation for "All Users" 10
Figure 16: VPN configuration prompt 10
Figure 17: Start of VPN connection 11
Figure 18: SECON-Server startup screen 11
Figure 19: iOS OpenVPN 12
Figure 20: Open OpenVPN Connect 12
Figure 21: Opening OpenVPN Connect with iTunes 13
Figure 22: Synchronizing OpenVPN Connect files 13
Figure 23: Adding OpenVPN Connect Server 14
Figure 24: Secure VPN connection on / off 14
Figure 25: Secure VPN connection established 15
Figure 26: SECON-Server startup screen with secure VPN connection 15
Figure 27: Android OpenVPN 16
Figure 28: Access rights 16
Figure 29: Open OpenVPN Connect 17
Figure 30: OpenVPN Connect startup screen 17
Figure 31: Drop-down list "Import" 17
Figure 32: Drop-down list "Import profiles from SD card" 17
Figure 33: Import query 18
Figure 34: Selection of the ovpn profile 19
Figure 35: Execution of the secure VPN connection 19
Figure 36: Confirmation prompt 20
Figure 37: Dial-up to the SECON-Server 20
Figure 38: Successful connection 21
Figure 39: Dial-up to the SECON-Server 21
Figure 40: SECON-Server startup screen 22
Figure 41: Terminating connection 22

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